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ABSTRACT

The expert system computer simulation detailed in this report is designed to investigate patterns of valuing in decision-making about dossiers of performance data used in teacher promotion evaluations. The knowledge base for the simulation consists of 111 questions organized into 117 rules. The questions and linked advice were derived from questionnaires completed by human judges of teacher dossiers, and the knowledge base is organized into sub-bases for five phases of dossier analysis: (1) preliminary screening; (2) analysis of nine individual data sources; (3) determination of data safety; (4) promotion decisions; and (5) comparison of two dossiers. This report lists the questions and rules for each of the nine individual data sources: (1) student achievement; (2) administrator reports; (3) other or unique data; (4) parent surveys; (5) peer reviews of materials; (6) professional activities; (7) student surveys; (8) systematic observations; and (9) teacher tests. It is noted that two judgments may be derived from the application of this system--to promote or to deny promotion, and the ranking of dossiers. The expert shell system used in this simulation design was MacSMARTS, and it was used on an Apple Macintosh microcomputer. (EW)

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EXPERT SYSTEM KNOWLEDGE BASE FOR A COMPUTER SIMULATION OF JUDGMENTS ON DOSSIERS OF SCHOOL TEACHER PERFORMANCE

VERSION 1.0

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EXPERT SYSTEM KNOWLEDGE BASE FOR A COMPUTER SIMULATION
OF
JUDGMENTS ON DOSSIERS OF SCHOOLTEACHER PERFORMANCE

Teacher evaluation is an informed, rational, subjective human activity. The purpose for design of this simulation was to investigate patterns of valuing in human expert decision-making about teacher dossiers of performance data. The expert system uses many of the same decision strategies as human judges, but also employs some not used by humans. Information about these strategies may be useful for training of judges for dossier evaluation.

The expert system shell used in this simulation design was MacSMARTS from Cognition Technology, 55 Wheeler Street, Cambridge, MA 02138. MacSMARTS uses a Prolog inference engine. MacSMARTS requires 134K of space. The computer was an Apple Macintosh Plus with 800K internal and external disk drives.

The knowledge base for the simulation design consists of 111 questions organized into 117 rules. The questions and linked advice were derived from questionnaires completed by human judges of teacher dossiers. These judges were from two school district promotion panels, students in a university course on teacher evaluation, and several university education faculty. The knowledge base requires 382K of space. The knowledge base is organized into sub-bases for five phases of dossier analysis: preliminary screening, analysis of nine individual data sources, determination of data safety, promotion decision, and comparison of two dossiers. Two judgments may be derived from this application: 1) Promote or Deny and 2) ranking of dossiers. The knowedge base will be refined in later versions.

The sub-bases include:

		Rules	Questions	Size
I.	Initial screening	5	4	17K
II.	Student achievement	7	8	23K
II.	Administrator report	6	5	20K
II.	Other, unique	5	13	17K
II.	Parent survey	7	8	23K
II.	Peer review of materials	10	10	33K
II.	Professional activity	12	9	39K
II.	Student survey	6	7	20K
II.	Systematic observation	9	11	29K
II.	Teacher tests	10	9	33K
III.	Data safe?	12	9	39K
IV.	Promote or Deny	9	6	29K
V.	Compare	19	12	60K

RULES: FOR I. INITIAL SCREENING

1 Assess each line with appropriate knowledge base, then use PROMOTION DECISION knowledge base.
IF YES: At least 3 years experience, with 1 in district?
IF YES: Dossier no more than 17 pages?
IF YES: Evidence appears in required, comparable formats (forms, procedures)?
IF YES: Evidence appears to be serious, good-faith?

2 DENY. Wait until minimum tenure met.
IF NO: At least 3 years experience, with 1 in district?

3 DENY. Wait until dossier is shortened to maximum of 17 pages.
IF NO: Dossier no more than 17 pages?

4 Refer dossier to Promotion Panel for decision.
IF NO: Evidence appears in required, comparable formats (forms, procedures)?

5 DENY. No hoaxes, please.
IF NO: Evidence appears to be serious, good-faith?

RULES: FOR II. ACHIEVEMENT

1 PASS: EXCEPTIONAL
IF YES: Goals & measures selected & validated as per district system?
IF YES: Do pre- and post- measures show pupil gain adjusted for prior achievement?
IF YES: Are descriptions of educational significance present?
IF YES: Are gain data significantly better than competitors?
IF YES: Have multi-year data been presented which show an exceptional pattern of achievement?

2 PASS
IF YES: Are significant gain data presented?
IF YES: Goals & measures selected & validated as per district system?
IF YES: Are pre- and post- measures used?
IF YES: Do gain data take into account prior achievement?
IF YES: Are descriptions of educational signficance present?

3 PASS: BARELY
IF YES: Are significant gain data presented?
IF YES: Goals & measures selected & validated as per district system?
IF YES: Are pre- and post- measures used?
IF NO: Do gain data take into account prior achievement?
IF YES: Are descriptions of educational signficance present?

4 PASS: BARELY
IF YES: Are significant gain data presented?
IF YES: Goals & measures selected & validated as per district system?
IF NO: Are pre- and post- measures used?
IF YES: Do gain data take into account prior achievement?
IF YES: Are descriptions of educational significance present?

5 FAIL: CLOSE
IF YES: Are significant gain data presented?

6 FAIL
IF NO: Goals & measures selected & validated as per district system?

7 FAIL
IF NO: Are significant gain data presented?

RULES: FOR II. ADMINISTRATOR REPORT

1 PASS: BARELY
IF YES: "...with exemplary practice"?
IF YES: Administrator identified?
IF NO: Most recent year included?

2 PASS
IF YES: "...with exemplary practice"?
IF YES: Administrator identified?
IF YES: Most recent year included?

3 PASS
IF YES: "contributing, well functioning"?
IF YES: Administrator identified?
IF YES: Most recent year included?

4 FAIL: CLOSE
IF YES: "contributing, well functioning" OR "...with exemplary practice"?
IF NO: Administrator identified?

5 FAIL: CLOSE
IF YES: "contributing, well functioning" OR "...with exemplary practice"?
IF NO: Most recent year included?

6 FAIL
IF NO: "contributing, well functioning" OR "...with exemplary practice"?

RULES: FOR II. OTHER, UNIQUE

1 FAIL. Combine this evidence with another line.
IF NO: Is the evidence distinct from other lines, i.e., clearly not fit in?

2 FAIL. Evidence is not equivalent of other lines.
IF NO: Is evidence from a non-classroom position, e.g., media, counselor, pull-out teacher, nurse?
IF NO: A significant teacher leadership function, with effects beyond the classroom?
IF NO: Benefits for a legitimate audience other than students, parents, peers, administrators?
IF NO: Educational function not usually associated with classroom teaching?
IF NO: A creative contribution to the educational system?

3 FAIL. Evidence does not suggest that effort had beneficial effect on a legitimate audience.
IF NO: Did the effort educationally benefit students?
IF NO: Did the effort benefit teachers in the system?
IF NO: Did the effort benefit parents in their support of the system?
IF NO: Did the effort bring significant additional resources and/or recognition to the system?
IF NO: Did the effort increase educational opportunities for students?

4 FAIL
IF NO: Were the data gathered and reported with credibility, using safe procedures?

5 PASS
IF YES: Evidence that someone benefitted from the effort: students, teachers, parents, administrators, public?

RULES: FOR II. PARENT SURVEY

1 PASS: EXCEPTIONAL
IF YES: Global rating 1 SD above the mean OR 4.9?
IF YES: If junior or senior high, were at least 3 classes per year used?
IF YES: Three years of data included?
IF YES: Form, data gathering, scoring and reporting safe?
IF YES: Return rate greater than 80% AND information supplied greater than requested?

2 PASS
IF YES: Global rating above 1.5 SD below the mean?
IF YES: If junior or senior high, were at least 3 classes per year used?
IF YES: Form, data gathering, scoring and reporting safe?
IF YES: Return rate greater than 60% AND information supplied greater than requested?
IF YES: All items above 3.3?

3 PASS: BARELY
IF YES: Global rating above 1.5 SD below the mean?
IF YES: If junior or senior high, were at least 3 classes per year used?
IF YES: Form, data gathering, scoring and reporting safe?
IF YES: Return rate greater than 60% AND information supplied greater than requested?
IF NO: All items above 3.3?

4 FAIL: CLOSE
IF YES: Global rating above 1.5 SD below the mean?
IF NO: If junior or senior high, were at least 3 classes per year used?
IF YES: Form, data gathering, scoring and reporting safe?
IF YES: Return rate greater than 60% AND information supplied greater than requested?

5 FAIL
IF NO: Form, data gathering, scoring and reporting safe?

6 FAIL
IF NO: Return rate greater than 60% AND information supplied greater than requested?

7 FAIL
IF NO: Global rating above 1.5 SD below the mean?

RULES: FOR II. PEER REVIEW OF MATERIALS

1 PASS: EXCEPTIONAL
IF YES: Did peers recommend promotion AND report evidence of exemplary practice?
IF YES: Did the materials contain curriculum, instruction, and student work & outcomes?
IF YES: Did the materials cover work done over more than one year?
IF YES: Review credibly organized, supervised, with 3 knowledgable, social/political detached peers?
IF YES: Was the review conducted within the past five years?

2 PASS
IF YES: Did peers recommend promotion?
IF YES: Did the materials contain curriculum, instruction, and student work & outcomes?
IF YES: 3 peers knowledgeable of school & subject/grade, but politically/socially detached?
IF YES: Was the review credibly organized and supervised?
IF YES: Was the review conducted within the past five years?

3 PASS: BARELY
IF YES: Did peers recommend promotion?
IF NO: Did the materials contain curriculum, instruction, and student work & outcomes?
IF YES: 3 peers knowledgeable of school & subject/grade, but politically/socially detached?
IF YES: Was the review credibly organized and supervised?
IF YES: Was the review conducted within the past five years?

4 FAIL: CLOSE
IF YES: Did peers recommend promotion?
IF YES: Did the materials contain curriculum, instruction, and student work & outcomes?
IF NO: 3 peers knowledgeable of school & subject/grade, but politically/socially detached?
IF YES: Was the review credibly organized and supervised?
IF YES: Was the review conducted within the past five years?

5 FAIL: CLOSE
IF YES: Did peers recommend promotion?
IF YES: Did the materials contain curriculum, instruction, and student work & outcomes?
IF YES: 3 peers knowledgeable of school & subject/grade, but politically/socially detached?
IF NO: Was the review credibly organized and supervised?
IF YES: Was the review conducted within the past five years?

6 PASS: BARELY. Minimum conditions met.
IF YES: Did peers recommend promotion?
IF YES: Did the materials contain curriculum, instruction, and student work & outcomes?
IF YES: 3 peers knowledgeable of school & subject/grade, but politically/socially detached?
IF YES: Was the review credibly organized and supervised?
IF YES: Was the review conducted between five and seven years ago?

7 FAIL
IF NO: Did peers recommend promotion?

8 FAIL
IF NO: 3 peers knowledgeable of school & subject/grade, but politically/socially detached?

9 FAIL
IF NO: Was the review credibly organized and supervised?

10 FAIL
IF YES: Did the review occur more than seven years ago?

RULES: FOR II. PROFESSIONAL ACTIVITY

1 PASS: EXCEPTIONAL
IF YES: Active in 5 of: inservice, leadership, prof. groups, community groups, colleagues, C&I (1)
IF YES: 2,> areas: involved, consistent, contributing, high quality, remarkable?
IF YES: Is substantial inservice education included?
IF YES: Does evidence show a pattern of consistency and long-term involvement?
IF YES: Is evidence well gathered, documented and credible?

2 PASS
IF YES: Active in 5 of: inservice, leadership, prof. groups, community groups, colleagues, C&I (1)
IF NO: 2,> areas: involved, consistent, contributing, high quality, remarkable?
IF YES: Is substantial inservice education included?
IF YES: Does evidence show a pattern of consistency and long-term involvement?
IF YES: Is evidence well gathered, documented and credible?

3 PASS
IF YES: Active in 5 of: inservice, leadership, prof. groups, community groups, colleagues, C&I (1)
IF YES: 2,> areas: involved, consistent, contributing, high quality, remarkable?
IF NO: Is substantial inservice education included?
IF YES: Does evidence show a pattern of consistency and long-term involvement?
IF YES: Is evidence well gathered, documented and credible?

4 PASS
IF YES: Active in 3-5 of: inservice, leadership, prof. groups, community groups, colleagues, C&I (1)
IF YES: 1,> area: involved, consistent, contributing, high quality, remarkable?
IF YES: Is substantial inservice education included?
IF YES: Does evidence show a pattern of consistency and long-term involvement?
IF YES: Is evidence well gathered, documented and credible?

5 PASS: BARELY
IF YES: Active in 3-5 of: inservice, leadership, prof. groups, community groups, colleagues, C&I (1)
IF NO: 1,> area: involved, consistent, contributing, high quality, remarkable?
IF YES: Is substantial inservice education included?
IF YES: Does evidence show a pattern of consistency and long-term involvement?
IF YES: Is evidence well gathered, documented and credible?

6 PASS: BARELY
IF YES: Active in 3-5 of: inservice, leadership, prof. groups, community groups, colleagues, C&I (1)
IF YES: 1,> area: involved, consistent, contributing, high quality, remarkable?
IF NO: Is substantial inservice education included?
IF YES: Does evidence show a pattern of consistency and long-term involvement?
IF YES: Is evidence well gathered, documented and credible?

7 PASS: BARELY
IF YES: Data in 2 of: inservice, leadership, prof. groups, community groups, colleagues, C&I (1)
IF YES: Is activity in at least 1 area: involved, consistent, contributing, high quality?
IF YES: Is inservice education included?
IF YES: Does evidence show a pattern of consistency and long-term involvement?
IF YES: Is evidence well gathered, documented and credible?

8 FAIL: CLOSE
IF YES: Data in 2 of: inservice, leadership, prof. groups, community groups, colleagues, C&I (1)
IF YES: 1,> area: involved, consistent, contributing, high quality, remarkable?
IF NO: Is inservice education included?
IF YES: Does evidence show a pattern of consistency and long-term involvement?
IF YES: Is evidence well gathered, documented and credible?

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9 FAIL: CLOSE
IF YES: Data in 2 of: inservice, leadership, prof. groups, community groups, colleagues, C&I ⓪
IF YES: 1,> area: involved, consistent, contributing, high quality, remarkable?
IF YES: Is inservice education included?
IF NO: Does evidence show a pattern of consistency and long-term involvement?
IF YES: Is evidence well gathered, documented and credible?

10 FAIL
IF NO: Data in 2,> of: inservice, leadership, prof. groups, community groups, colleagues, C&I ①

11 FAIL
IF NO: Is activity in at least 1 area: involved, consistent, contributing, high quality?

12 FAIL
IF NO: Is evidence well gathered, documented and credible?

① ...development, advanced degrees or certificates?

RULES: FOR II. STUDENT SURVEY

1 PASS: EXCEPTIONAL
IF YES: Global rating 1 SD above the mean OR 4.9 (whichever is lower)?
IF YES: If junior or senior high, were at least 3 classes per year used?
IF YES: Were three years of data included?
IF YES: Were the form, data gathering, scoring and reporting safe?
IF YES: All items above 4.0?

2 PASS
IF YES: Global rating above 1.5 SD below the mean?
IF YES: If junior or senior high, were at least 3 classes per year used?
IF YES: Were the form, data gathering, scoring and reporting safe?
IF YES: All items above 3.3?

3 PASS: BARELY
IF YES: Global rating above 1.5 SD below the mean?
IF YES: If junior or senior high, were at least 3 classes per year used?
IF YES: Were the form, data gathering, scoring and reporting safe?
IF NO: All items above 3.3?

4 FAIL: CLOSE
IF YES: Global rating above 1.5 SD below the mean?
IF NO: If junior or senior high, were at least 3 classes per year used?
IF YES: Were the form, data gathering, scoring and reporting safe?

5 FAIL
IF NO: Were the form, data gathering, scoring and reporting safe?

6 FAIL
IF NO: Global rating above 1.5 SD below the mean?

RULES: FOR II. SYSTEMATIC OBSERVATION

1 FAIL
IF NO: Observer trained, monitored, socially-politically neutral?

2 FAIL
IF NO: More than 4, unannounced, representative visits?

3 FAIL
IF NO: Analyst identified, expert, & reliable?

4 FAIL
IF NO: Recording & analysis systems defensible?

5 FAIL
IF NO: Data & reporting safe?

6 PASS: EXEMPLARY
IF YES: USE OF TIME and OPPORTUNITY TO LEARN "exemplary"?
IF YES: All categories "recommend" or "exemplary"?
IF YES: At least 4 categories included?
IF YES: Absence of major category explained?

7 PASS
IF YES: USE OF TIME and OPPORTUNITY TO LEARN included?
IF YES: All categories "recommend" or "exemplary"?
IF YES: More than 2 categories included?

8 PASS: BARELY
IF YES: All categories "recommend" or "exemplary"?

9 FAIL. Quality not shown.
IF NO: All categories "recommend" or "exemplary"?

RULES: FOR II. TEACHER TESTS

1 FAIL
IF NO: Are the test data safe?

2 FAIL
IF YES: Is the score below the 50%ile?

3 FAIL
IF NO: Is the test appropriate for the teacher (grade level, subject area)?

4 FAIL
IF NO: Is the test one of the following (or equivalent) : NTE, GRE, SCAT, CBEST?

5 FAIL
IF NO: Was the test taken within 9 years?

6 PASS: EXCEPTIONAL
IF YES: Is the score in the 90-99%ile range?
IF YES: Was the test taken within 5 years?

7 PASS
IF YES: Was the test taken within 9 years?
IF YES: Is the score in the 90-99%ile range?

8 PASS
IF YES: Is the score in the 60-89%ile range?
IF YES: Was the test taken within 5 years?

9 FAIL: CLOSE
IF YES: Is the score in the 50-59%ile range?

10 FAIL: CLOSE
IF YES: Is the score in the 60-89%ile range?
IF NO: Was the test taken within 5 years?
IF YES: Was the test taken within 9 years?

RULES: FOR III. ARE DATA SAFE?

1 DATA ARE SAFE
IF YES: Were forms, surveys, & reports standard, district-adopted?
IF YES: Were data collected, stored, reported by an identified, credible third party?
IF YES: Were participants identified, available for confirmation contact?
IF NO: Are there any doubts about the honesty and fairness of the data?

2 DATA ARE SAFE
IF NO: Were forms, surveys, & reports standard, district-adopted?
IF YES: Were data collected, stored, reported by an identified, credible third party?
IF YES: Were participants identified, available for confirmation contact?
IF NO: Are there any doubts about the honesty and fairness of the data?
IF YES: Alternate forms give good validity & reliability data; AND, useage explanation?

3 DATA ARE SAFE
IF YES: Were forms, surveys, & reports standard, district-adopted?
IF NO: Were data collected, stored, reported by an identified, credible third party?
IF YES: Were participants identified, available for confirmation contact?
IF NO: Are there any doubts about the honesty and fairness of the data?
IF NO: Do data require collection, storage, & report by identified, credible third party?

4 DATA ARE SAFE
IF YES: Were forms, surveys, & reports standard, district-adopted?
IF YES: Were data collected, stored, reported by an identified, credible third party?
IF NO: Were participants identified, available for confirmation contact?
IF NO: Are there any doubts about the honesty and fairness of the data?
IF NO: Do these data require that participants be identified, available for confirmation contact?

5 DATA ARE NOT SAFE
IF YES: Are there any doubts about the honesty and fairness of the data?

6 Probably safe, but request an explanation to make sure.
IF NO: Were forms, surveys, & reports standard, district-adopted?
IF YES: Do alternate forms, surveys, & reports give good validity & reliability data?
IF NO: Is there an explanation for alternate useage?

7 DATA NOT SAFE
IF NO: Were forms, surveys, & reports standard, district-adopted?
IF NO: Do alternate forms, surveys, & reports give good validity & reliability data?

8 DATA NOT SAFE
IF NO: Were data collected, stored, reported by an identified, credible third party?
IF YES: Do data require collection, storage, & report by identified, credible third party?

9 DATA NOT SAFE
IF NO: Were participants identified, available for confirmation contact?
IF YES: Do these data require that participants be identified, available for confirmation contact?

10 DATA NOT SAFE
IF NO: Were forms, surveys, & reports standard, district-adopted?

11 DATA NOT SAFE
IF NO: Were data collected, stored, reported by an identified, credible third party?

12 DATA NOT SAFE
IF NO: Were participants identified, available for confirmation contact?

RULES: FOR IV. PROMOTE OR DENY

1 PROMOTE
IF YES: Does the dossier have at least 4 lines of evidence which PASS (at any level)?

2 PROMOTE
IF NO: Does the dossier have at least 4 lines of evidence which PASS (at any level)?
IF YES: Are there 3 lines which PASS (not BARELY) and at least 1 which is FAIL: CLOSE?
IF YES: Is there at least 1 PASS: EXCEPTIONAL?

3 PROMOTE
IF NO: Does the dossier have at least 4 lines of evidence which PASS (at any level)?
IF YES: Are there 3 lines which PASS: EXCEPTIONAL?

4 PROMOTE
IF NO: Does the dossier have at least 4 lines of evidence which PASS (at any level)?
IF YES: Are there 3 lines which PASS (not BARELY)?
IF YES: Is there at least one PASS line which is truly outstanding and unusual?
IF YES: Does outstanding & unusual line impact extend beyond this teacher's classroom?

5 DENY
IF NO: Does the dossier have at least 4 lines of evidence which PASS (at any level)?
IF NO: Are there 3 lines which PASS (not BARELY) and at least 1 which is FAIL: CLOSE?

6 DENY
IF NO: Does the dossier have at least 4 lines of evidence which PASS (at any level)?
IF YES: Are there 3 lines which PASS (not BARELY) and at least 1 which is FAIL: CLOSE?
IF NO: Is there at least 1 PASS: EXCEPTIONAL?

7 DENY
IF NO: Does the dossier have at least 4 lines of evidence which PASS (at any level)?
IF NO: Are there 3 lines which PASS (not BARELY)?
IF YES: Is there at least one PASS line which is truly outstanding and unusual?
IF YES: Does outstanding & unusual line impact extend beyond this teacher's classroom?

8 DENY
IF NO: Does the dossier have at least 4 lines of evidence which PASS (at any level)?
IF YES: Are there 3 lines which PASS (not BARELY)?
IF NO: Is there at least one PASS line which is truly outstanding and unusual?

9 DENY
IF NO: Does the dossier have at least 4 lines of evidence which PASS (at any level)?
IF NO: Are there 3 lines which PASS (not BARELY)?
IF NO: Is there at least one PASS line which is truly outstanding and unusual?
IF NO: Does outstanding & unusual line impact extend beyond this teacher's classroom?

RULES: FOR V. COMPARE

1 A>B
IF NO: Did both receive the same PROMOTE/DENY?
IF YES: Did A receive PROMOTE?

2 A>B
IF YES: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF YES: Does A rate higher on at least 1 line, and lower on none?

3 A>B
IF YES: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF YES: Is A superior on more lines than B?

4 A>B
IF YES: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF NO: Is A superior on more lines than B?
IF YES: Is A superior on STUDENT ACHIEVEMENT, PEER REVIEW, STUDENT SURVEY when they appear?

5 A>B
IF YES: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF YES: Are the results mixed, i.e., each is higher on some?
IF NO: Same points: achievement (9), peer & pupil (8), observation & tests & activity (7), parents (1)
IF YES: Does A have more points?

6 A>B
IF NO: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF YES: Are the results mixed, i.e., each is higher on some?
IF YES: Same points: achievement (9), peer & pupil (8), observation & tests & activity (7), parents (1)
IF YES: Does A have more points?

7 A>B
IF NO: Do both have same # of lines of evidence?
IF NO: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF NO: Same points: achievement (9), peer & pupil (8), observation & tests & activity (7), parents (1)
IF YES: Does A have more points?

8 B>A
IF NO: Did both receive the same PROMOTE/DENY?
IF NO: Did A receive PROMOTE?

9 B>A
IF YES: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF NO: Does A rate higher on at least 1 line, and lower on none?

10 B>A
IF YES: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF NO: Is A superior on more lines than B?

11 B>A
IF YES: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF NO: Is A superior on more lines than B?
IF NO: Is A superior on STUDENT ACHIEVEMENT, PEER REVIEW, STUDENT SURVEY when they appear?

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12 B>A
IF YES: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF YES: Are the results mixed, i.e., each is higher on some?
IF NO: Same points: achievement (9), peer & pupil (8), observation & tests & activity (7), parents
IF NO: Does A have more points? (1)

13 B>A
IF NO: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF YES: Are the results mixed, i.e., each is higher on some?
IF YES: Same points: achievement (9), peer & pupil (8), observation & tests & activity (7), parents
IF NO: Does A have more points? (1)

14 B>A
IF NO: Do both have same * of lines of evidence?
IF NO: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF NO: Same points: achievement (9), peer & pupil (8), observation & tests & activity (7), parents
IF NO: Does A have more points? (1)

15 TIE
IF YES: Did both receive the same PROMOTE/DENY?

16 TIE
IF YES: Do both have same lines of evidence?
IF NO: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF NO: Are the results mixed, i.e., each is higher on some?
IF YES: Same points: achievement (9), peer & pupil (8), observation & tests & activity (7), parents (1)

17 TIE
IF YES: Do both have same * of lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF YES: Same points: achievement (9), peer & pupil (8), observation & tests & activity (7), parents (1)

18 TIE
IF NO: Do both have same * of lines of evidence?
IF NO: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF YES: Same points: achievement (9), peer & pupil (8), observation & tests & activity (7), parents (1)

19 TIE
IF NO: Do both have same lines of evidence?
IF YES: Do they differ on 1 or more ratings (e.g., PASS, FAIL: CLOSE)?
IF YES: Are the results mixed, i.e., each is higher on some?
IF YES: Same points: achievement (9), peer & pupil (8), observation & tests & activity (7), parents (1)

(1) ...(6), administrator & Other (5)?

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